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10/564,423	01/11/2006	Robert Fifield	853663.434USPC	8968

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EXAMINER	
AHMED, ENAM	

ART UNIT	PAPER NUMBER
2112	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/564,423	FIFIELD ET AL.	
	Examiner	Art Unit	
	ENAM AHMED	2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☒ Claim(s) *10 and 12-17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/20/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Final

This office action is in response to applicant's amendment filed on 10/22/08.

Response to applicant's arguments

The applicant's arguments have been fully considered, and are not found persuasive.

Response to applicant's remarks

On page 10 with respect to claim 1, the applicant's mention claim recites "storing, by the at least one repeater node, a copy of the forwarded data packet" and "the at least one repeater node initiating retransmission of the data packet by transmitting the stored copy of the forwarded data packet to the receiver." It is respectfully submitted that these limitations are not met by the Szymanski and Alapuranen references relied upon by the present office action to reject claim 1.

The examiner disagrees with the statement, and points out the transmitter acts as a repeater in the sense that segments of packets are being continuously transmitted wherein the receiver receives the packets and stored good and bad segments for transmission. Thus, the Alapuranen reference teaches storing, by the at least one repeater node, a copy of the forwarded data packet" ([0037])

and "the at least one repeater node initiating retransmission of the data packet by transmitting the stored copy of the forwarded data packet to the receiver" ([0037], [0040] and [0043]).

On page 13, with respect to independent claims 10 and 15 the applicant makes similar arguments, and the examiner will use the same reasoning as applied above to claim 1.

Claim Objections

Claims 10 and 12-17 use term "adapted". The examiner advises in a future communication to modify the adapted terminology in the claims in order to avoid any potential 35 U.S.C. 112 issues.

35 U.S.C. 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szymanski (U.S. Patent No. 6,851,086) in view of Alapuranen (U.S. Pub. No. 2004/0010736).

With respect to claim 1, the Szymanski reference teaches issuing a no-acknowledge (NACK) signal over the network, by the receiver, if the data packet is not properly received by the receiver (column 27, lines 14-19). The Szymanski reference does not teach transmitting, by the transmitter, a data packet onto multiple paths of a network between the transmitter and the receiver at least one of the paths including at least one of the repeater transceiver node; forwarding, by the at least one repeater node, the data packet to the receiver and storing, by the at least one repeater node, a copy of the forwarded data packet and initiating retransmission of the data packet onto the network by the at least one repeater node responsive to receipt of the NACK signal by the at least one repeater node, the at least one repeater node initiating retransmission of the data packet by transmitting the stored copy of the forwarded data packet to the receiver. The Alapuranen reference teaches transmitting, by the transmitter, a data packet onto multiple paths of a network between the transmitter and the receiver at least one of the paths including at least one of the repeater transceiver node ([0022 -0023]); forwarding, by the at least one repeater node, the data packet to the receiver and storing, by the at least one repeater node, a copy of the forwarded data packet ([0022], [0025] and [0037]); and initiating retransmission of the data packet onto the network by the at least one repeater node responsive to receipt of the NACK signal by the at least one repeater node, the at least one repeater node initiating retransmission of the data packet by transmitting the stored copy of the forwarded data packet to the receiver ([0030], [0037-0038], [0040] and [0043]). Thus, it would have been obvious to one of ordinary skill in the art at the

time of the invention was made to have combined the references Szymanski and Alapuranen to incorporate transmitting, by the transmitter, a data packet onto multiple paths of a network between the transmitter and the receiver at least one of the paths including at least one of the repeater transceiver node; forwarding, by the at least one repeater node, the data packet to the receiver and storing, by the at least one repeater node, a copy of the forwarded data packet and initiating retransmission of the data packet onto the network by the at least one repeater node responsive to receipt of the NACK signal by the at least one repeater node, the at least one repeater node initiating retransmission of the data packet by transmitting the stored copy of the forwarded data packet to the receiver into the claimed invention. The motivation for transmitting, by the transmitter, a data packet onto multiple paths of a network between the transmitter and the receiver at least one of the paths including at least one of the repeater transceiver node; forwarding, by the at least one repeater node, the data packet to the receiver and storing, by the at least one repeater node, a copy of the forwarded data packet and initiating retransmission of the data packet onto the network by the at least one repeater node responsive to receipt of the NACK signal by the at least one repeater node, the at least one repeater node initiating retransmission of the data packet by transmitting the stored copy of the forwarded data packet to the receiver is to minimize latency ([0031] – Alapuranen reference).

With respect to claim 2, all of the limitations of claim 1 have been addressed. The Szymanski reference does not teach wherein said retransmission is effected by all

repeater nodes that forwarded the data packet and that receive the NACK signal. The Alapuranen reference teaches wherein said retransmission is effected by all repeater nodes that forwarded the data packet and that receive the NACK signal ([0022] and [0025]). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Szymanski and Alapuranen to incorporate wherein said retransmission is effected by all repeater nodes that forwarded the data packet and that receive the NACK signal into the claimed invention. The motivation for wherein said retransmission is effected by all repeater nodes that forwarded the data packet and that receive the NACK signal is to minimize latency ([0031] – Alapuranen reference).

With respect to claim 3, all of the limitations of claim 1 have been addressed. The Szymanski reference does not teach wherein said retransmission is effected by said at least one repeater node and the transmitter. The Alapuranen reference teaches in which the retransmitting step is affected by at least one of the repeater nodes and the transmitter ([0022] and [0025]). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Szymanski and Alapuranen to incorporate in which the retransmitting step is effected by at least one of the repeater nodes and the transmitter into the claimed invention. The motivation for in which the retransmitting step is effected by at least one of the repeater nodes and the transmitter is to minimize latency ([0031] – Alapuranen reference).

With respect to claim 6, all of the limitations of claim 1 have been addressed. The Szymanski reference does not teach wherein said retransmission of the data packet onto the network by the at least one repeater node includes using multiple paths available from the repeater node to the receiver. The Alapuranen reference teaches wherein said retransmission of the data packet onto the network by the at least one repeater node includes using multiple paths available from the repeater node to the receiver ([0022 - 0023]). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Szymanski and Alapuranen to incorporate wherein said retransmission of the data packet onto the network by the at least one repeater node includes using multiple paths available from the repeater node to the receiver into the claimed invention. The motivation for wherein said retransmission of the data packet onto the network by the at least one repeater node includes using multiple paths available from the repeater node to the receiver is to minimize latency ([0031] – Alapuranen reference).

With respect to claim 7, the Szymanski reference teaches the receiver issuing an acknowledge ACK signal in the event that the data packet is correctly received by said receiver, the at least one repeater node forwarding the ACK signal to the transmitter (column 26, lines 34-40).

Claims 10 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diepstraten (U.S. Patent No. 5,339,316) in view of Alapuranen (U.S. Pub. No. 2004/0010736).

With respect to claims 10 and 15, the Diepstraten reference teaches a receive module to receive data packets originating from the transmitter (column 4, lines 3-14); a transmit module to forward the data packets to another node in the network (column 6, line 46 – column 7, line 20). The Diepstraten reference does not teach a pending packet buffer to store copies of the forwarded data packets and a retransmission module to initiate retransmission over the network of data packets of previously forwarded data packets for which no-acknowledge (NACK) signals are received, responsive to the NACK signal being received by the repeater node, the retransmission module being adapted to initiate retransmission of the data packets for which NACK signals are received by transmitting the stored copies of these data packets. The Alapuranen reference teaches a pending packet buffer for storing copies of the forwarded data packets ([0032]) and a retransmission module to initiate retransmission over the network of data packets of previously forwarded data packets for which no-acknowledge (NACK) signals are received, responsive to the NACK signal being received by the repeater node, the retransmission module being adapted to initiate retransmission of the data packets for which NACK signals are received by transmitting the stored copies of these data packets ([0030] and [0038]). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Diepstraten and

Alapuranen to incorporate a pending packet buffer for storing copies of the forwarded data packets and a retransmission module to initiate retransmission over the network of data packets of previously forwarded data packets for which no-acknowledge (NACK) signals are received, responsive to the NACK signal being received by the repeater node, the retransmission module being adapted to initiate retransmission of the data packets for which NACK signals are received by transmitting the stored copies of these data packets into the claimed invention. The motivation for a pending packet buffer for storing copies of the forwarded data packets and a retransmission module to initiate retransmission over the network of data packets of previously forwarded data packets for which no-acknowledge (NACK) signals are received, responsive to the NACK signal being received by the repeater node, the retransmission module being adapted to initiate retransmission of the data packets for which NACK signals are received by transmitting the stored copies of these data packets is to minimize latency ([0031] – Alapuranen reference).

With respect to claim 16, the Diepstraten reference teaches wherein the retransmission module, in the repeater node, is adapted to retransmit the data packets after a first retransmittal interval when no corresponding ACK or NACK signal is received (column 5, lines 41-60).

With respect to claim 17, the Diepstraten reference teaches wherein said transmitter node is adapted to retransmit the data packets after a second retransmittal

interval that is longer than the first retransmittal interval, when no corresponding ACK or NACK signal is received (column 5, lines 41-60).

Claims 18- 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diepstraten (U.S. Patent No. 5,339,316), Alapuranen (U.S. Pub. No. 2004/0010736) in view of Gu et al. (U.S. Patent No. 6,845,089).

With respect to claim 18, all of the limitations of claim 15 have been addressed. The Diepstraten reference does not teach in which the transmitter does not retransmit the original data packet in the event of the issuing of a NACK signal by the receiver. The Gu et al. reference teaches in which the transmitter does not retransmit the original data packet in the event of the issuing of a NACK signal by the receiver (column 1, lines 39-50). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Diepstraten and Gu et al. to incorporate in which the transmitter does not retransmit the original data packet in the event of the issuing of a NACK signal by the receiver into the claimed invention. The motivation for in which the transmitter does not retransmit the original data packet in the event of the issuing of a NACK signal by the receiver is to appropriately control an initial system access power to minimize response time and increase transmission efficiency (column 2, lines 4-6 – Gu et al. reference).

With respect to claim 19, all of the limitations of claim 15 have been addressed. The Diepstraten reference does not teach in which the transmitter does not listen for NACK signals relating to its own transmitted data packets. The Gu et al. reference teaches in which the transmitter does not listen for NACK signals relating to its own transmitted data packets (column 1, lines 39-50). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Diepstraten and Gu et al. to incorporate in which the transmitter does not listen for NACK signals relating to its own transmitted data packets into the claimed invention. The motivation for in which the transmitter does not listen for NACK signals relating to its own transmitted data packets is to appropriately control an initial system access power to minimize response time and increase transmission efficiency (column 2, lines 4-6 – Gu et al. reference).

Claim 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diepstraten (U.S. Patent No. 5,339,316), Alapuranen (U.S. Pub. No. 2004/0010736) in view of Syzmanski (U.S. Patent No. 6,851,086).

With respect to claim 11, all of the limitations of claim 10 have been addressed. The Diepstraten reference does not teach including purge module to remove a stored data packet from the pending packet buffer responsive to an acknowledge (ACK) signal being received with respect to that data packet. The Szymanski reference teaches including purge module to remove a stored data packet from the pending packet buffer responsive

to an acknowledge (ACK) signal being received with respect to that data packet (column 3, lines 61 – 65). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Diepstraten and Syzmanski to incorporate including purge module to remove a stored data packet from the pending packet buffer responsive to an acknowledge (ACK) signal being received with respect to that data packet into the claimed invention. The motivation for including purge module to remove a stored data packet from the pending packet buffer responsive to an acknowledge (ACK) signal being received with respect to that data packet is to minimize latency.

With respect to claim 12, the Diepstraten reference does not teach wherein the retransmission module is adapted to transmit the data packets over all available paths. The Alapuranen reference teaches wherein the retransmission module is adapted to transmit the data packets over all available paths ([0022 -0023]). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Diepstraten and Alapuranen to incorporate wherein the retransmission module is adapted to transmit the data packets over all available paths into the claimed invention. The motivation for wherein the retransmission module is adapted to transmit the data packets over all available paths is to minimize latency ([0031] – Alapuranen reference).

With respect to claim 13, the Diepstraten reference teaches a repeater node adapted to forward ACK signals to the transmitter but not to forward NACK signals to the transmitter (column 4, lines 30-43).

With respect to claim 14, the Diepstraten reference teaches wherein the retransmission module is adapted to retransmit the data packets after first retransmittal interval when no corresponding ACK or NACK signal is received (column 5, lines 41-60).

Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szymanski (U.S. Patent No. 6,851,086), Alapuranen (U.S. Pub. No. 2004/0010736) in view of Gu et al. (U.S. Patent No. 6,845,089).

With respect to claim 4, the Szymanski reference does not teach wherein the transmitter does not retransmit the data packet if the receiver issues the NACK signal. The Gu et al. reference teaches wherein the transmitter does not retransmit the data packet if the receiver issues the NACK signal (column 1, lines 39-50). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Szymanski and Gu et al. to incorporate wherein the transmitter does not retransmit the data packet if the receiver issues the NACK signal into the claimed invention. The motivation for wherein the transmitter does not retransmit the data packet if the receiver issues the NACK signal is to appropriately control an initial

system access power to minimize response time and increase transmission efficiency (column 2, lines 4-6 – Gu et al. reference).

With respect to claim 5, the Szymanski reference does not teach wherein the transmitter does not listen for NACK signals relating to its own transmitted data packets. The Gu et al. reference teaches wherein the transmitter does not listen for NACK signals relating to its own transmitted data packets (column 1, lines 39-50). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Szymanski and Gu et al. to incorporate wherein the transmitter does not listen for NACK signals relating to its own transmitted data packets into the claimed invention. The motivation for wherein the transmitter does not listen for NACK signals relating to its own transmitted data packets is to appropriately control an initial system access power to minimize response time and increase transmission efficiency (column 2, lines 4-6 – Gu et al. reference).

Claim 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szymanski (U.S. Patent No. 6,851,086), Alapuranen (U.S. Pub. No. 2004/0010736) in view of Diepstraten (U.S. Patent No. 5,339,316).

With respect to claim 8, all of the limitations of claim 1 have been addressed. The Szymanski reference teaches including retransmitting the data packet, by the repeater node, after first retransmittal interval if no ACK or NACK signal is received with respect

to said forwarded data packet. The Diepstraten reference teaches including retransmitting the data packet, by the repeater node, after first retransmittal interval if no ACK or NACK signal is received with respect to said forwarded data packet (column 5, lines 41-60). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Szymanski and Diepstraten to incorporate including retransmitting the data packet, by the repeater node, after first retransmittal interval if no ACK or NACK signal is received with respect to said forwarded data packet into the claimed invention. The motivation for including retransmitting the data packet, by the repeater node, after first retransmittal interval if no ACK or NACK signal is received with respect to said forwarded data packet is for an efficient method for dealing with lost packets resulting from medium access collisions and interference of other sources (column 1, lines 48-51).

With respect to claim 9, all of the limitations of claim 8 have been addressed. The Szymanski reference does not teach including the transmitter retransmitting the data packet after a second retransmittal interval if no ACK signal is received, the second retransmittal interval being greater than the first retransmittal interval. The Diepstraten reference teaches including the transmitter retransmitting the data packet after a second retransmittal interval if no ACK signal is received, the second retransmittal interval being greater than the first retransmittal interval (column 5, lines 41-60). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Szymanski and Diepstraten to incorporate including the

transmitter retransmitting the data packet after a second retransmittal interval if no ACK signal is received, the second retransmittal interval being greater than the first retransmittal interval into the claimed invention. The motivation for including the transmitter retransmitting the data packet after a second retransmittal interval if no ACK signal is received, the second retransmittal interval being greater than the first retransmittal interval is for an efficient method for dealing with lost packets resulting from medium access collisions and interference of other sources (column 1, lines 48-51).

Conclusion

1. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Enam Ahmed whose telephone number is 571-270-1729. The examiner can normally be reached on Mon-Fri from 8:30 A.M. to 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques, can be reached on 571-272-6962.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EA

1/4/09

/Guy J Lamarre/

Primary Examiner, Art Unit 2112